

IN THE SPECIFICATION

Please amend the specification as follows:

Please amend the text under the heading "Abstract of the Disclosure" by replacing it with the following amended text, which is also attached hereto on a separate sheet without revision marks:

~~Some configurations of the present~~ The present invention ~~thus provide~~ provides a method for producing images of an object. The method includes dynamically helically scanning an object on a moving table utilizing a scanning imaging system. During the scan, projection views of the object are acquired and stored together with corresponding table locations. A plane for reconstruction of an image of the object is selected. The stored table locations are used to determine geometric variables applicable to the stored projection views; and the stored projection views are filtered and backprojected utilizing the geometrical variables to reconstruct an image of the object at the reconstruction plane.

Please amend paragraph [0002] of the specification by replacing it with the following amended paragraph:

[0002] ~~Known scanning~~ Known scanning computed tomography (CT) imaging systems do not allow for the pitch of a helical scan to vary during a scan. Instead, the helical pitch (i.e., table speed) is held constant during a CT scan. To achieve constant table speed, the table is positioned a distance away from a desired starting location and accelerated to a desired speed. During the acceleration, the x-ray beam is not turned on and no data is acquired. When the table reaches the desired speed and passes the starting location, the beam is turned on and data acquisition starts.

Please amend paragraph [0046] of the specification by replacing it with the following amended paragraph:

[0046] A dynamical helical scan type is selected at 302. (Selection 302 can be omitted in configurations that do not provide a selection of scan types other than dynamical helical scans.) The motion of table 46 is then started at 304, in accordance with the parameters of the dynamical scan, and a loop variable J is initialized. A projection view of an object or patient 22 being scanned on table 46 is acquired at 306. A center view for a selected image location is determined at 308 using the current gantry 12 location, halfscan weights are determined for the projection view for the selected image location at 308. In configurations described by flowchart 300, the location of table 46 is determined only for every Nth acquisition. Therefore, a test is performed at 310 to determine whether to determine the location of table 46 for this acquisition. If no location is to be stored, the looping variable is incremented and the acquired view is stored at 312. Otherwise, the location of table 46 is determined (or estimated), the location is stored with the corresponding acquired view at 314, and the looping variable is reinitialized. In either case, a test is then performed to determine whether the scan is ~~finished at 214.~~ finished at 316. If not, another projection view of an object is ~~acquired at 316.~~ acquired at 306. Otherwise, the table is stopped at 318. Final helical weights are determined utilizing the halfscan weights determined at 308 and the stored views are weighted using the final helical weights at 320. The stored table locations are used to determine the location of x-ray tube 14 and detector 18 for stored views relative to the image reconstruction plane at 322, using interpolation to estimate table 46 locations for those views for which no table location data was stored at 314. Filtering and backprojecting is then performed on the weighted views to reconstruct an image of the object at the reconstruction plane at 324. This filtering and backprojecting utilizes the x-ray tube 14 and detector 18 positions determined at 322.